ABSTRACT

BIOAVAILABILITY OF QUERCETIN AFTER ORAL ADMINISTRATION OF QUERCETIN-SUCCINIC ACID COCRYSTAL IN RABBIT

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Quercetin is a polyphenolic flavonoid with potential antioxidant activity which is belongs to the Biopharmaceutics Classification System (BCS) II, therefore modifying the quercetin formulation affect the bioavailability. In the present study, quercetin was modified by adding succinic acid as a coformer to the quercetin. The bioavailability profile of the 250mg/kg doses of quercetin was investigated in 6 rabbits. The animals were devided into quercetin alone group and quercetin-succinic acid cocrystal group. The concentration of quercetin in plasma were determined by a validated High Pressure Liquid Chromatography method. Bioavailability parameters including T_{max}, C_{max} and AUC_{0-480} were determined. In quercetin alone, the average value of T_{max}, C_{max}, AUC_{0-480} were 152,50 min, 0,59 ± 0,22 µg/mL, 454,12 ± 150,18 µg.min/mL, respectively. T_{max}, C_{max} and AUC_{0-480} of quercetin after the administration of quercetin-succinic acid cocrystal were 287,50 min, 0,74 ± 0,05 µg/mL, 439,49 ± 85,53 µg.min/mL, respectively. It is concluded that the quercetin-succinic acid cocrystallization does not increase the bioavailability of quercetin.

Keywords: Quercetin, succinic acid, cocrystal, bioavailability, HPLC